Northwest Center for Outcomes Research in Older Adults: A VA HSR&D Center of Excellence

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Affiliated with the University of Washington School of Public Health and Community Medicine, Seattle,WA & Center for Health Research (Kaiser Permanente), Portland, OR

Effect of Therapeutic Footwear on Foot Reulceration in Patients With Diabetes: A Randomized Controlled Trial

Gayle E. Reiber, Douglas G. Smith, Carolyn Wallace, Katrina Sullivan, Shane Hayes, Christy Vath, Matthew L. Maciejewski, Onchee Yu, Patrick J. Heagerty and Joseph LeMaster

Results of Recent Trial by Center of Excellence Investigators Published in JAMA

Individuals with diabetes incur 67% of all lower-limb amputations in the United States. Approximately half of diabetes-related amputations have been attributed to poorly fitting footwear initiating a causal chain leading to foot ulcers and amputations. The etiology of diabetic foot ulcers and amputations is well characterized, but the efficacy of footwear in preventing reulceration has undergone limited investigation. The purpose of this randomized clinical trial was to determine whether extra-depth and -width therapeutic shoes used with 2 types of inserts would reduce reulceration in diabetic individuals with a history of foot ulcer. We hypothesized that the group assigned to therapeutic shoes with custom cork inserts would have the lowest reulceration rates, followed closely by those assigned to therapeutic shoes with prefabricated inserts.

METHODS

400 diabetes patients with history of foot ulcer in the VA Puget Sound Health Care system and the Group Health Clinic (GHC) of Puget Sound who did not require custom shoes for severe foot deformity were enrolled between August 1997 and December 1998 and followed for 2 years. Participants were randomly assigned into three groups. The first group received 3 pairs of therapeutic shoes and 3 pairs of customized medium-density cork inserts with a neoprene closed-cell cover (n = 121); the second group received 3 pairs of therapeutic shoes and 3 pairs of prefabricated, tapered polyurethane inserts with a brushed nylon cover (n = 119); and, controls in the third group wore their usual footwear (controls; n = 160). The University of Washington, Seattle, and GHC granted human subjects approval. Participants continued to receive regular health care and foot care from the VA or GHC. Participants received no compensation other than the study footwear. To prevent contamination of the footwear interventions by patient education or clinical care, study visits were conducted in a separate clinical research center.

Visits were scheduled every 17 weeks to collect information on physical, foot, and diabetes characteristics; footwear use; foot lesions; ulcers; physical activity; and the amount of out-of-bed time that

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Emblem: "Soul Catcher" ...a Northwest Coast Indian symbol used to ward off spirits that brought physical or mental illness. Artist: Marvin Oliver.

participants wore shoes, socks/stockings, or slippers or went barefoot. Footwear compliance was computed from a physical activity questionnaire by quantifying the time out of bed that was spent "in shoes" or "not in shoes."

The main study outcome measure was incidence of a foot ulcer, defined as a cutaneous erosion extending into or through the dermis to deeper tissue or other lesions that did not heal within 30 days. The pivotal event triggering the sequence of events preceding each lesion or ulcer was identified by patient self-report. Ulcer episode was defined as the interval from ulcer identification to healing. Multiple ulcers occurring on the same day on the same foot (often the result of minor trauma) were defined as a single episode. All patients were referred to their usual health care provider for foot care since foot care was not a study provision. Health care practitioners were notified in writing of lesions and ulcers. Patients wearing intervention footwear who experienced foot ulcers resumed wearing intervention footwear following healing.

RESULTS

The risk ratio (RR) for persons with 1 or more reulcerations in the group with therapeutic shoes and cork inserts compared with those in the control group was 0.88 (95% CI, 0.51-1.52). The RR comparing the group with prefabricated inserts with the control group was 0.85 (95% CI, 0.48-1.48). When examining total ulcer episodes, the RR comparing the group with cork inserts with controls was 0.86 (95% CI, 0.45-1.63) and the RR comparing the group with prefabricated inserts with controls was 0.80 (95% CI, 0.41-1.56). In the secondary analysis, the risk ratio for reulceration comparing persons without foot sensation with those with sensation was 3.68 (95% CI, 1.81-7.49). All ulcer episodes in patients assigned to therapeutic shoes and 88% wearing nonstudy shoes occurred in patients with foot insensitivity. The study findings can be generalized to patients with a prior foot ulcer. Results of a secondary analysis of individuals who lacked sensation had 2-year reulceration rates of 15% in cork inserts/therapeutic shoes, 13% in prefabricated polyurenthane inserts/therapeutic shoes, and 20% in controls.

Compliance with use of intervention shoes when wearing shoes was 83% in the group with cork inserts and 86% in the group with prefabricated inserts. When participants were out of bed and not wearing shoes, they averaged just under 1 hour per day barefoot, 1 hour per day in stockings, and 3 hours per day in slippers. Sixty-two participants had a total of 95 reulcerations occurring in 84 ulcer episodes. The cumulative percentage of participants with foot ulcers during the study period was 15% with therapeutic shoes and cork inserts, 14% with therapeutic shoes and prefabricated inserts, and 17% in the control group. There were no statistically significant differences in ulcers or ulcer episodes between groups.

The study had several limitations. The percentage of participants with foot insensitivity at baseline was not as high as expected. Data from the trial and others indicate that participants with foot insensitivity are at highest risk of ulceration. Lesion identification and referral by the study staff and follow-up by primary care physicians at the two sites may have contributed to our low ulcer rates.

This study of persons without severe foot deformity does not provide evidence to support widespread dispensing of therapeutic shoes and inserts to diabetic patients with a history of foot ulcer. Study shoes and custom cork or preformed polyurethane inserts conferred no significant ulcer reduction compared with control footwear. This study suggests that careful attention to foot care by health care professionals may be more important than therapeutic footwear. The study does not negate the possibility that special footwear is beneficial in persons with diabetes who do not receive such close attention to foot care by their health care providers or in individuals with severe foot deformities.

Source: Gayle E. Reiber, et al., JAMA, Vol. 287(19), May 2002, p. 2552-2558.

Xiao-Hua Andrew Zhou, Ph.D

Dr. Andrew Zhou is a core Investigator and the Director of Biostatistics Unit at the NW HSR&D Center of Excellence at the VA Puget Sound Health Care System (VAPSHCS). He is also an affiliate Associate Professor in the Department of Biostatistics at the University of Washington. Dr. Zhou came to VAPSHCS this year from Indianapolis where he was a tenured Associate Professor in the Division of Biostatistics at the Indiana University School of Medicine.

Dr. Zhou received his bachelor degree in mathematics from Sichuan University in 1984, his master's degree in statistics from University of Calgary, and his doctoral degree in biostatistics from the Ohio State University in 1991. Dr. Zhou was a postdoctoral fellow at Harvard University from 1991 to 1993. Dr. Zhou joined Indiana University as an Assistant Professor in 1993, was promoted to an Associate Professor in 1997.

Much of Dr. Zhou's research has been in the area of health services research, diagnostic medicine, and mental health, particularly methods for analyzing health care cost data, observational studies, randomized trials with non-compliance, and ROC curve methodology. In addition, Dr. Zhou has expertise in the areas of multilevel data and missing data. Dr. Zhou is currently the principal investigator on two NIH-funded grants to develop new statistical methods for causal analyses of randomized encouragement design studies and analyses of health care costs. He serves as an Associate Editor of Biometrics and as an Editorial Board Member of Statistics in Medicine. He was program Chair and is currently Chair-elect for the Section on Statistics in Epidemiology of the American Statistical Association. Dr. Zhou has published over 73 articles in refereed journals, including an article in 2001, jointly with Drs. Hirano, Imbens, and Rubin, which was awarded the Mitchell Prize by the International Society for Bayesian Analysis and Section on Bayesian Statistical Sciences of American Statistical Association. In 1998, he was elected as a member of the International Statistical Institute.

Andrew's wife, Pollyanna, works for Safeco Insurance Company as a programmer analyst. They are blessed with two wonderful kids, a 10 year old daughter, Vanessa, and a seven year old son, Joshua. Andrew especially enjoys working out regularly at a local gym weight lifting, running, and playing racquetball.

Evaluation of Hepatitis C Testing Strategies Using Decision Analysis

Michael K. Chapko, Kevin L. Sloan, John Davison, D. Robert Dufour, Daniel D. Bankson, Michael Rigsby, Jason A. Dominitz

Objectives. This paper assesses three strategies for hepatitis C testing being considered by the VA plus five additional strategies. The strategies consist of various combinations of two tests for determining the presence of antibodies (enzyme immunoassays [EIA] and recombinant immunoblot assays [RIBA]) and one test of viremia (reverse transcription polymerase chain reaction [PCR]). Using optical density to divide EIA results into there categories (high positive, low positive, and negative) was also considered.

Methods. Decision analysis was used to compare the eight strategies on the following criteria: cost, sensitivity, specificity, percent antibody-indeterminate, positive predictive value and negative predictive value. Parameters in the decision tree included prevalence of hepatitis C; proportion viremic; and sensitivity, specificity, and cost of the individual tests.

Results. Of the strategies that start with EIA and include PCR to assess viral status, the strategy that starts with EIA with three levels of optical density (EIA-OD), followed by RIBA for EIA low positives, and then PCR for all positives was found to have essentially equal or better sensitivity, specificity, and percent of individuals designated antibody-indeterminate compared to the other strategies under consideration. EIA-OD followed by RIBA and then PCR was more expensive ($11.14 versus $10.90 per individual tested) than EIA followed only by PCR (a strategy recommended by the recent NIH Consensus Conference for higher risk patients), but the slight additional cost resulted in far fewer false positives.

Conclusions. Overall, using the optical density ratio of EIA to determine the presence of antibodies against HCV, followed by RIBA for low positives, then PCR to assess for viremia is the best strategy when testing patients for HCV. This strategy requires only one patient visit to the phlebotomist and the sequencing of several tests by the laboratory (reflexive testing). It also minimizes false positives. This strategy should result in a reduction in physician visits to fully diagnose HCV and less patient anxiety.

Impact Statement. The implementation of these findings has the potential for decreasing the cost of hepatitis C testing and maximizing correct identification of hepatitis C status within the VA.

Condensed Summary. Decision analysis was used to evaluate eight hepatitis C testing strategies on the following criteria: cost, sensitivity, specificity, percent antibody-indeterminate, positive predictive value and negative predictive value. Using the optical density ratio of enzyme immunoassays (EIA) to determine the presence of antibodies, followed by recombinant immunoblot assays (RIBA) for low positives, then transcription polymerase chain reaction (PCR) to assess for viremia was the best strategy.

Regional Variations in Quality of Life among COPD Patients

Pierre-Olivier Bridevaux, David H. Au, Vincent S. Fan, Mary B. McDonell, Stephan D. Fihn

Objectives: To describe regional variations in health-related quality of life (HRQoL) of patients with chronic obstructive pulmonary disease (COPD) treated in the Veterans Affairs (VA) health care system.

Methods: This was a cross-sectional analysis of baseline data collected from seven VA General Internal Medicine Clinics that participated in the Ambulatory Care Quality Improvement Project (ACQUIP). Patients 45 years or older who self-reported lung disease, had a clinical diagnosis of COPD, and responded to the SF-36 and/or disease-specific Seattle Obstructive Lung Disease (SOLDQ) were included.

Results: Of 36,821 patients who returned a health inventory, 8,337 self-reported COPD. Of these, 4,173 patients returned the SF-36/SOLDQ and had a diagnosis of COPD. The majority were male (98%), Caucasian (83%) and married (60%). Their mean age was 67. 31%, they reported income below $10,000 per year, and 39% had some high school education. The unadjusted mean SF-36 Physical Component Summary Score (PCS) was 28.1 (range among sites 25.3-32.6, $p<0.01$) and the mean Mental Component Summary Score was 44.0 (range 41.0-45.8, $p=0.541$). Among the 8 domains of the SF-36, Bodily Pain and Physical Functioning showed the broadest unadjusted range of results. The SOLDQ, a disease specific HRQoL instrument, showed marked unadjusted differences between sites for the Physical Function domain (mean 36.7, range 30.4-46.3, [where a 5-10 point difference is clinically meaningful] $p<0.01$). Less marked differences were observed for Emotional Function and Coping Skills. After adjustment for socio-demographic variables and co-morbidities, the maximal range of differences remained statistically and clinically significant for the Physical Functioning (14.0 points) and the Role Physical domains (14.2) of the SF-36 and the Physical Function (12.1), Emotional Function (11.2), and Coping Skills (9.6) domains of the SOLDQ.

Conclusions: We observed significant regional differences in health status as measured by the SOLDQ and SF-36 among VA patients with COPD who were enrolled in primary care. This persisted after adjustment for socio-demographic variables and co-morbidities. The SF-36 was less sensitive to these differences.

Impact statements: Variation in the health status of patients with COPD enrolled in different VA primary care clinics suggests adverse selection and should be considered when evaluating health outcomes and clinical performance in geographically diverse settings.

Validation Of Patient Self-Report For Diabetes Mellitus

Johnathan Nguyen, Mary McDonell, Bessie Young, Helen Ding, Stephan Fihn

Background/Objective: The accuracy of self-reported chronic diseases compared to information obtained from computerized databases/medical records has not been well studied. Our objective was to validate accuracy of self-reported diabetes among Veterans Affairs (VA) patients.

Setting: General Internal Medicine clinic at VA Puget Sound Health Care System, Seattle.

Design and Methods: We conducted a cross-sectional analysis of baseline data collected for the Ambulatory Care QUality Improvement Project (ACQUIP). Eligible participants were mailed a health inventory with a check list of common chronic medical conditions. We compared agreement between self-reported diagnosis of diabetes (SR) and other criteria including: an ICD-9 code for diabetes (250.XX), a prescription for diabetic medication (insulin or oral hypoglycemic agents), or compatible laboratory results (fasting plasma glucose >126 mg/dL, random glucose >200 mg/dL, HbA1c >7.0%).

Results: Of 11,392 patients surveyed, 6,995 (61%) returned the health inventory. 1,625 (23.2%) reported diabetes. The positive predictive value of SR was 87.8% compared to a reference standard of an ICD-9 diagnosis of diabetes. Agreement between SR and diagnosis of diabetes was very high (kappa (k) =0.84). Agreement between lab criteria for diabetes or prescription of diabetic medication and an ICD-9 diagnosis of diabetes were both lower than SR (k=0.73 and 0.82 respectively). Addition of a prescription for diabetic medication to SR, addition of a compatible laboratory test or both did not improve overall agreement above that achieved with SR alone (k=0.84, 0.78, and 0.78 respectively). Compared to 1,207 patients whose self-report of diabetes was concordant with an ICD-9 diagnosis (true positives [TP] and true negatives [TN]), the 418 patients with discordant reports (false positives [FP] and false negatives [FP]), had similar demographic characteristics (gender, race, income, employment, education) but a higher proportion of surveys completed by proxy, more co-morbidities, and longer duration of VA care. We reviewed the medical records of the discordant cases and found evidence of diabetes in 53% of FN and 67% of FP respondents.

Conclusion: Self-reported diagnosis of diabetes has excellent correlation with clinical diagnosis of diabetes.

Impact: This is useful information for researchers using administrative databases or survey data for case finding or assessing health outcomes among diabetics.

Association Between Blood Pressure Control and Adherence Measures Using Self-Report and Pharmacy Data

Ken Taneda, Christopher Bryson, Mary McDonell, Stephan Fihn

Objectives: We assessed the relationships between adherence to hypertension medication as measured by self-report, a new pharmacy-based measure, and control of blood pressure (BP). Hypertension affects the majority of veterans over 60 and has severe sequelae if not appropriately managed. Recent studies document sub-optimal control of BP among VA patients. This may be due in part to poor medication adherence.

Methods: As part of the Ambulatory Care Quality Improvement Project (ACQUIP), a randomized trial involving 7 VA general internal medicine clinics, we collected medication data and self-reported comorbidities. Using a novel algorithm (ReComp) that combines information from several previously reported indexes, we computed refill compliance, and assessed its association with self-reported adherence (SA) and BP measured at clinic visits within 90 days of SA among treated hypertensive patients. ReComp compensates for the limitation of prior methods for calculating medication adherence by taking into account both overstocking and days out of medication. SA during the past 4 weeks was assessed by mailed questionnaire using a 5-point Likert scale.

Results: BP records were available for 7,727 of 15,763 patients sent the hypertension questionnaire during the 2-year study period. Among these, 7,268 patients received at least one antihypertensive medication in the 6-months prior to returning the questionnaire. 80% were out of medication fewer than 80% of the days, while 24% obtained a 50% overstock for the same period. SA was modestly associated with ReComp (4% increase in days covered for each 1-point increase in SA, 95% CI 2 – 6%, Spearman R 0.06, $p<0.01$). Each 1-point increase in SA reflected a 19% increase in the risk of being at least 80% adherent (RR 1.19, 95% CI 1.1 – 1.3). For each 1-unit increase in ReComp, subjects were 6% more likely to have a BP <140/90 (RR 1.06; 95% CI 1.0 – 1.13, $p=0.05$). No difference was observed using previously reported, pharmacy-based, measures of compliance.

Conclusion: ReComp, a new measure of medication adherence, is readily computed from computerized pharmacy data and is associated with both SA and BP control.

Impact: ReComp appears to be a better measure of adherence for both descriptive studies and studies of association than prior measures.

FELLOWS' PROFILES

Christine Rousseau, PhD

Christine is a first year VA postdoctoral fellow. She completed her doctoral degree at the University of California, Berkeley where she investigated viral and human genetic factors involved in perinatal HIV-1 transmission and disease progression under the mentorship of Dr. Mary-Claire King. She has since worked at the Fred Hutchinson Cancer Research Center with Dr. Julie Overbaugh, investigating HIV-1 breastfeeding transmission and breast milk viral load among infected women in Nairobi, Kenya. Trained as a molecular geneticist, Christine has always approached infectious disease epidemiology projects from the molecular perspective. Now she is interested in expanding her training by pursuing a Master of Science degree in the Department of Epidemiology at the University of Washington.

As a member of the HSR&D department, she is developing projects in collaboration with Dr. Jason Dominitz and the Hepatitis C Resource Center in the Seattle VA hospital. She will be investigating demographic factors associated with treatment allocation among Hepatitis C infected veterans. She is also developing a project to investigate human genetic factors associated with Hepatitis C infection and treatment outcomes.

Christine has many outside interests that parallel her scientific research. Along with several colleagues from Berkeley, she co-founded a non-profit corporation, Sustainable Sciences Institute (www.ssilink.org), whose mission is to support public health researchers in developing countries by providing training and resources needed to combat infectious disease. Christine has been involved as an instructor in several scientific training programs both locally and in Latin America through several organizations. Born to Chilean immigrant parents, she has maintained an interest in Latin America and other developing countries. In addition, she enjoys promoting scientific education to underserved communities locally.

Christopher Bryson, MD

Chris Bryson is a third year HSR&D fellow. He attended Austin College in Sherman, Texas, where he enjoyed pursuing a liberal arts education and received a BA in biology. Other interests in college included classical Greek and computer science, which have continued to be active hobbies and serendipitous resources. Continuing at the University of Texas Southwestern in Dallas, Chris completed medical school and a residency in internal medicine, training at Parkland Memorial Hospital and the Dallas VA Medical Center. He then decided to seek further training in epidemiology and health services as a VA HSR&D ambulatory care fellow. He finished an MS in epidemiology from the School of Public Health at the University of Washington this past summer.

Chris' main research interests include the epidemiology and prevention of congestive heart failure, the treatment of hypertension, and pharmacoepidemiology. Other interests include alcohol and heart failure, the use and effectiveness of antihypertensives in VA, and computer based algorithms that transform pharmacy data into compliance data.

He is engaged to Dr. Jiho Huang, an occupational medicine physician and they enjoy hiking and backpacking.

Lisa Chew, MD

Lisa is a first year research fellow in HSR&D. She attended University of California, Berkeley and received her medical education at University of California, San Francisco. Wanting a change of scenery, she moved 900 miles north for her residency and chief residency in Internal Medicine at the University of Washington. Following residency, she joined the faculty at the University of Washington as a Clinician-Educator at Harbor-view Medical Center. After several years, Lisa became interested in research and improving care of vulnerable populations and chose to pursue formal research training. She recently completed the Robert Wood Johnson Clinical Scholars Program at the University of Washington.

Lisa's research interests are in chronic disease management and barriers to quality care such as limited literacy, mental illness, and substance abuse in high risk, underserved populations. Recently, she completed a project looking at the association of limited health literacy and adherence to preoperative instructions among VA patients.

Although Lisa has been in Seattle quite a while (going on 10 years now), she still enjoys living in the Pacific Northwest, especially with her very spoiled German Shepherd-Lab mutt, Sami, who is an excellent running, snow-shoeing, and cross-country skiing partner as well as an extremely talented couch potato.

Northwest HSR&D Center of Excellence

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HSR&D Newsletter

Contributions for the Newsletter should be sent to:
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HSR&D Deadlines

Local deadline for proposal review is two weeks prior to Research Review Committee meeting and two months prior to VACO deadline. Local Review Committee meets on 1st Friday of each month.

VACO Deadlines

Letters of Intent (LOI): Accepted any time, reviewed monthly. Guidelines found in VHA Handbook 1204.01.

Investigator-Initiated Research (IIR) and Nursing Research Initiatives (NRI) Proposals: Due May 1 and November 1. An approved LOI is required prior to submission. Guidelines found in VHA Handbook 1204.01.

Research Career Scientist Awards: March 1 and September 1. Guidelines found in VHA Handbook 1204.02.

Career Development Awards: Due February 15 and August 15. Must have approved LOI prior to submission; due November 1 and May 1. Guidelines found in VHA Handbook 1204.02.

Under Secretary's Award for Outstanding Achievement in Health Services Research: Submissions due in VACO October 1. Guidelines found in VHA Handbook 1204.04.

For current guidelines and forms, please refer to www.va.gov/resdev

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Career Development Program Manager - L. Robert Small, Jr.	(202) 408-3659
FAX Number	(202) 565-9007

18 Abstracts Accepted for Presentation at 21st Annual HSR&D Meeting

Posters

- Anginal Symptoms Predict Total Mortality Among Outpatients with CAD Irrespective of Age, Race, Education or Comorbidities, Christopher Bryson, MD
- Health Literacy Among Preoperative Patients in a VA Medical Center, Lisa Chew, MD
- Depression Screening: Comparison of Three Methods to Provider Referral in a VA Primary Care Clinic, Jonathan Kanter, PhD
- Missed Opportunities to Treat High Lipid Levels in Male VA Patients with Ischemic Heart Disease, Branko Kopjar, MD
- Cost-effectiveness of Collaborative Care Depression Treatment in a Veteran Primary Care Population, Chuan-Fen Liu, PhD
- The Prevalence of Knee Pain and Symptomatic Knee Osteoarthritis Among Veteran Traumatic Amputees and Nonamputees, Daniel Norvell, PhC
- Managing IRB Reviews for a Nationwide Study, Nancy Sharp, PhD
- Association Between Blood Pressure Control and Adherence Measures Using Self-report and Pharmacy Data, Ken Taneda, MD
- Risk of Cardiovascular Events with Renal Insufficiency: Results from the ACQUIP, Bessie Young, MD

Oral Presentations

- Regional Variations in Quality of Life Among COPD Patients, Pierre-Olivier Bridevaux, MD
- Evaluation of Hepatitis C Testing Strategies in Decision Analysis, Michael Chapko, PhD
- A Single Question to Detect Inadequate Health Literacy in VA Patients, Lisa Chew, MD
- Validation of Patient Self-Report for Diabetes Mellitus, Jonathan Nguyen, BS
- Importance of Physician Race vs. Interpersonal Quality in Patients' Experience of Health Care, Somnath Saha, MD

Workshops

- What Can We Learn About Veterans, Their Diversity and Their Health Care from the CDC BRFSS?, Thomas Koepsell, MD
- CBOC Utilization and Cost Data from DSS: Can We Believe What We See?, Matthew Maciejewski, PhD
- Using Facilitation as a Method to Evaluate Processes in Health Services Translation Research, Carolyn Wallace, PhD

Breakfast Breakout Session

- Clinical Reminders as Tools for Quality Improvement in Veteran Populations, Ashley Hedeen, MD

Postdoctoral PhD Fellowship in Health Services Research Available at the VA Medical Center/University of Washington Starting October 2003

Fellows engage in full-time research and related educational activities. Faculty provides expertise in areas of interest including clinical epidemiology, biostatistics, ambulatory care, outcomes research, psychometrics, health care economics, quality of care, geriatrics, long-term care, ethics and health policy.

US Citizenship required. A statement of research interests, specific aims for a VA relevant research project, identification of a local faculty mentor, curriculum vitae and three letters of reference should be sent by March 1st to: Gayle Reiber, MSN, PhD, HSR&D VA Puget Sound Health Care System (S-152), 1660 S Columbian Way, Seattle, WA 98108, (206) 764-2089.

Newly Funded Seattle HSR&D/DVA Projects

- VA Nursing Quality Indicator Database, IIR 01-160, Anne Sales, MSN PhD, PI
- Effects of Outlier Identification Strategy on Facility Profiling, IIR 00-077. Kevin Sloan, MD, PI
- Nurse Staffing and Patient Outcomes in VA, MRC 03-067, Anne Sales, MSN PhD, PI.
- Dr. Jodie Haselkorn, MD MPH, one of our affiliate investigators has received one of only two VHA Multiple Sclerosis Centers of Excellence (MS-CE) Awards. Seattle and Portland VAs will work jointly specializing in research, education and clinical care.

Under Secretary's Award for Outstanding Achievement in Health Services Research

Stephan Fihn, MD MPH, Director of our HSR&D Center of Excellence, accepted the prestigious Under Secretary's Award for Outstanding Achievement at the 20th Annual HSR&D meeting in Washington, DC. The award was presented by Acting Under Secretary for Health, Frances Murphy, MD.